

Permitted Stress Values for Boiler and Pressure Vessel Calculations

It is and has been the position of the Boiler and Pressure Vessel Rules Board that use of a Stress value for a material greater than that allowed for that same material at the time when the vessel was originally constructed would not be permitted for vessels subject to regulation by the Boiler and Pressure Vessel Safety Section.

Below is an excerpt of the March 7th, 2007 Boiler and Pressure Vessel Rules Board meeting wherein they re-affirmed this position.

Excerpt of the March 7th, 2007 Indiana Boiler and Pressure Vessel Rules Board Meeting

7. Report of the Division Director

a. ...

b. *Director Willis asked the Rules Board to re-affirm their previously stated position regarding permissible stress values to be used when performing calculations of components of existing vessels. Background: When ASME lowered the Design Margin (Factor of Safety) from 4 to 3.5, it was perceived that there could be a large number of cases brought forward attempting to legitimize increases in pressure or temperature, or make thinned vessel sections acceptable, based solely upon the higher allowed stress values (generally, an increase of about 12.5%) afforded in the code subsequent to the lowering of the design margins. Concerns about this possibility led the Board to conclude that they would not permit a stress value to be used when completing strength calculations (such as required thickness, permitted pressure/temperature, useful life, etc.) that exceeded the stress value allowed by the edition of the code to which the vessel had been constructed originally. The Boiler and Pressure Vessel Rules Board unanimously re-affirmed this position.*

Questions regarding the application of this document may be addressed to the Boiler and Pressure Vessel Safety Section.

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